

FACTSHEET

Plant Protection & Quarantine

United States
Department of
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Animal and
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Service

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The Mediterranean Fruit Fly

The Mediterranean fruit fly (*Ceratitis capitata*), commonly called Medfly, or Moscarda in Spanish, is one of the world's most destructive agricultural pests.

The female Medfly attacks ripening fruit, piercing the soft skin and laying eggs in the puncture. The eggs hatch into larvae (maggots), which feed inside the fruit pulp.

Appearance and Life Cycle

The adult Medfly is slightly smaller than a common housefly and is very colorful. It has dark blue eyes, a shiny, black thorax (back), and a yellowish abdomen with silvery cross bands. Its wings, normally drooping, display a blotchy pattern with yellow, brown, and black spots and bands.

The life cycle of the Medfly has five phases: (1) the adult female deposits eggs under the skin of fruit, (2) the eggs hatch and produce maggots or wormlike larvae, (3) the larvae feed on the pulp of fresh fruits and vegetables before dropping to the ground, (4) the larvae transform into pupae in the soil, and (5) the pupae mature into adults and emerge from the soil. Under tropical summer weather conditions, the Medfly completes its life cycle in 21 to 30 days.

History

The Medfly originated in Africa. It has since spread throughout the Mediterranean region, southern Europe, the Middle East, western Australia, South and Central America, and Hawaii. In general, it is found in most tropical and subtropical areas of the world.

The Medfly became established in Hawaii in 1910. Hawaii remains infested with this pest, and no eradication program is currently under way. The first U.S. mainland infestation occurred in Florida in 1929. Several infestations have occurred on the mainland since then. However, State and Federal eradication programs in California, Florida, and Texas have prevented it from becoming established.

Eradication

The eradication of the Medfly is accomplished by action in three areas: survey, regulation, and control.

Survey—The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS), along with State departments of agriculture, maintains trapping programs in high-risk areas of States susceptible to Medfly establishment. When one or more Medflies is collected in an area, APHIS and State officials immediately implement a delimiting survey. Using the detection site as the focal point, field crews position additional traps to determine if an infestation exists and to locate and define the limits of the infested area.

Regulation—If an infestation exists, Federal and State quarantine regulations are imposed to help prevent artificial spread of the pest. Federal quarantine laws regulate the interstate movement of any article that may harbor the fly. State regulations control the movement of these articles going to uninfested areas of the same State. Articles regulated by State and Federal authorities include all Medfly-host fruits and vegetables present in the area. Open-air fruit and vegetable stands must provide protective covers for the produce to prevent infestation, and commercial and home-grown produce may not be moved without special inspection and treatment.

Control—Three kinds of treatment are used alone or in combination to eradicate the Medfly.

Aerial and Ground Bait Spray Application

This spray is approved for use by the Environmental Protection Agency. The spray contains minimal amounts of an insecticide and a protein/sugar bait that attracts the flies.

Sterile Insect Technique (SIT)

In the SIT, Medflies are reared in large quantities, sterilized with a small amount of irradiation, and released into areas where they mate with wild Medflies. Such matings do not produce offspring.

Eventually the wild population is eliminated through attrition.

SIT is most effective against low-level Medfly populations where a high proportion of sterile to wild flies can be achieved to ensure success. Initial applications of insecticide bait spray are sometimes necessary to bring local populations down to low densities.

Insecticide Application to Soil Under Host Trees

These products will kill some larvae as they enter the soil to pupate and most of the adults as they later emerge.

Currently, application of insecticide to the soil is used only when larvae are detected. The preferred and most popular eradication strategy is an integrated approach combining all three treatments, with emphasis on the use of SIT.

Damage

In the United States, the Medfly could attack peaches, pears, plums, apples, apricots, avocados, citrus, cherries, figs, grapes, guavas, kumquats, loquats, nectarines, peppers, persimmons, tomatoes, and several nuts.

If the Medfly were to become established, consumer prices would go up and produce would become less available. In addition, backyard gardens, as well as commercial production areas, would require increased use of pesticides on a routine basis.

In 1993, APHIS estimated that annual losses attributable to the Medfly in the continental United States would be about \$1.5 billion annually if this exotic pest were to become established. These losses would come in the form of export sanctions, lost markets, treatment costs, reduced crop yields, deformities, and premature fruit drop.

The Medfly in Mexico and Guatemala

In 1977, the Governments of the United States, Mexico, and Guatemala initiated a cooperative program known as the Moscamed Program to eradicate the Medfly from Mexico and to maintain a barrier in Guatemala to halt the Medfly's northern

spread. This program is designed to suppress Medfly populations and reduce the risk of introduction into the United States.

Mexico has been free of Medfly since 1982, except for outbreaks in the southernmost State of Chiapas, adjacent to Guatemala.

The Moscamed Program operates two facilities that produce sterile Medflies—one in Metapa de Domínguez, Mexico, and one in El Pino, Guatemala.

Keeping the Medfly Out

Many of the insects, weeds, and plant diseases that attack U.S. crops are foreign invaders. APHIS administers agricultural quarantine laws to help keep foreign plant pests and diseases out and to control domestic pests and diseases of limited distribution.

Travelers returning to the continental United States from Hawaii or a foreign country are prohibited from bringing into the country fresh fruits, meats, plants, birds, and plant and animal products that may harbor pests or diseases.

In fiscal year 1998, agricultural officers cleared for entry more than 400,000 aircraft that brought travelers and cargo to the United States. In the same year, officers intercepted more than 1.8 million illegal plants, animals, or plant and animal byproducts. More than 52,000 plant pests and diseases identified as dangerous to the U.S. agricultural industry were also intercepted.

Additional Information

If you have questions about the Medfly, call the central office of APHIS' Plant Protection and Quarantine (PPQ) unit at (301) 734-8645, or contact a U.S. Federal regulatory official, listed in the Federal Government section of your telephone directory under USDA, APHIS, PPQ.

You may also call your State's regulatory officials, usually listed under department of agriculture, plant protection or regulatory division, in the State government section of your telephone directory.

In addition, APHIS' Internet home page (<http://www.aphis.usda.gov>) provides up-to-date information on various agricultural pests and diseases and other related topics.

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